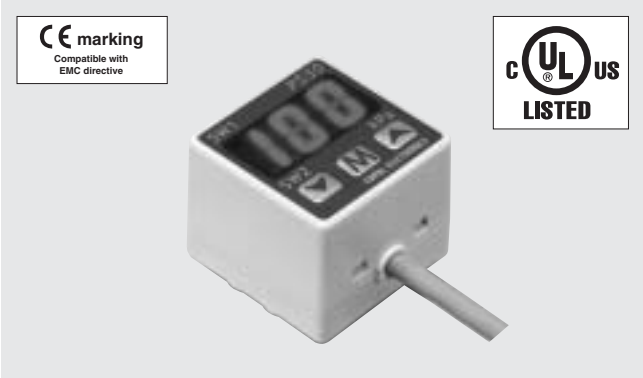
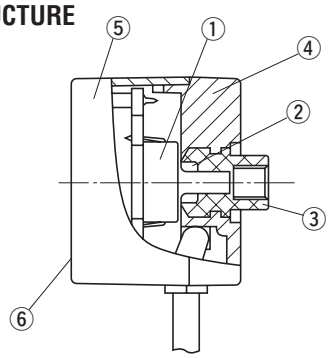
PRESSURE SWITCHES WITH GAUGE PS30



INTERNAL STRUCTURE



	Part name	Material
①	Pressure transducer	P-2000
②	"O" ring	Fluoro-rubber
③	Pressure port	Brass (Ni-plated)
④	Base	ABS (Acrylonitrile-butadiene-styrene)
⑤	Housing	
⑥	Panel sheet	Polyester

■ FEATURES

- Optimum for pneumatic equipment and semiconductor manufacturing equipment
- Larger size display and high luminance LED for best visibility
- Eight switch output modes
- Low consumption by nondisplay mode

■ MODEL NUMBER DESIGNATION

P S 3 0 - 1 0 2 R - N

Series name

Rated pressure range
102R : –100 ~ 100 kPa
103R : –0.1 MPa ~ 1.00 MPa

Switch output interface
N : NPN open collector
P : PNP open collector

■ LIST OF MODEL NUMBERS

Switch output interface / Pressure reference / Rated pressure range	Gauge	
	–100 ~ 100 kPa	–100 ~ 1000 kPa
NPN	PS30-102R-N	PS30-103R-N
PNP	PS30-102R-P	PS30-103R-P

❊ **Please refer to the LIST OF MODEL NUMBERS when placing orders.**

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PRESSURE SWITCHES WITH GAUGE

■ STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25 ± 5 °C and excitation voltage of 24 V DC.

Item / Model number			PS30	
			102R	103R
General specifications	Pressure reference		Gauge	
	Rated pressure range	kPa	–100 ~ 100	–100 ~ 1000
	Maximum pressure	kPa	200	1500
	Break-down pressure	kPa	500	2000
	Operating temp. range	°C	–10 ~ 50	
	Compensated temp. range	°C	0 ~ 50	
	Thermal error		±3 %F.S. (0 ~ 50 °C)	
	Operating humidity	%RH	35 ~ 85 (No condensation)	
	Storage temp.	°C	–20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum)	
	Pressure medium		Non-corrosive gases	
	Insulation resistance	MΩminimum	100 (DC500 V)	
	Dielectric strength		500 V AC, 60 s (Leakage current 1 mA maximum)	
	Pressure port		M5 female screw, “O” ring groove (P8)	
	Net weight	g	Approx. 60 (Including 1.5 m cable)	
Power	Supply voltage	V DC	12 ~ 24 V ± 10 % (Including ripple voltage)	
	Consumption current	mA maximum	40	
Display	Display element		LED (2 and 1/2 digit)	
	Rated display range	kPa	–100 ~ 100	———
		MPa	———	–0.10 ~ 1.00
	Display accuracy		±1 %F.S.	
	Resolution		1 count	
Switch output	No. of outputs		2	
	Output interface		NPN or PNP transistor, open collector output	
	Display		Output 1 (SW1), Output 2 (SW2) Light on when output is ON.	
	Repeatability	%F.S.	±0.3 maximum	
	Switch hysteresis		0 ~ 30 counts (Adjustable)	
	Switching capacity		30 V DC 100 mA maximum Short-circuit protection	
	Residual voltage	V maximum	1.2 V (NPN), 2.2 V (PNP)	
	Response	ms	Approx 5, 25, 250 (Adjustable)	

■ ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Permissible change
Vibration	10~500 Hz, 98.1 m/s² or 1.5 mm P-P, 3 directions for 2 hours each	± 2 %F.S. maximum after test ✻1
Shock	490 m/s², 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure、10^6 cycles	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	
EMC	EMI : EN 55011 Group 1, class B (1991) EMS : EN 61326-1	± 5 %F.S. maximum during test ✻1

✻1 : Change in the pressure indication, switch operating points.

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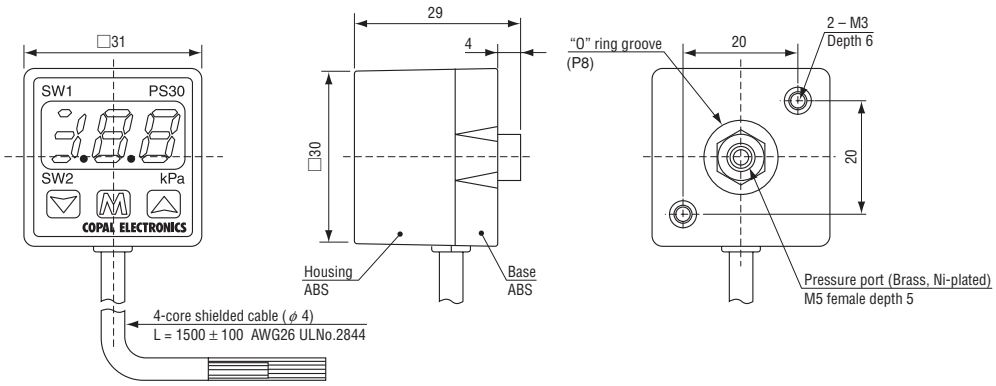
■ OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit : mm)

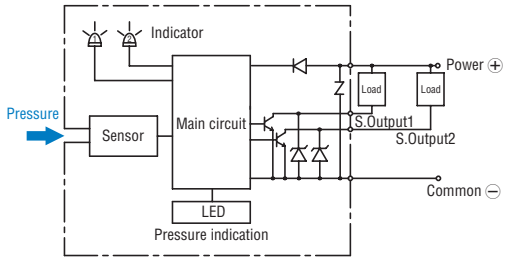


PS30

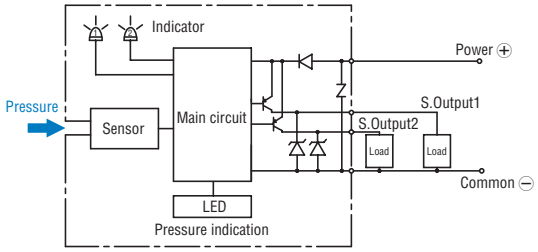
Wire color	Connection
Brown	Power ⊕
Black	Switch output 1
White	Switch output 2
Blue	Common

■ INTERNAL ELECTRICAL SCHEMATICS

● NPN output type



● PNP output type



■ PRESSURE UNIT SETTING

Please refer to the right list.

(Note) Diagonal column : No unit can be selected due to resolution and number of digits.

Selection number	Pressure unit	Pressure range			
		102R		103R	
		Display multiplier	Display range	Display multiplier	Display range
0	kPa	×1	–100 ~ 100		
1	MPa			×1	–0.10 ~ 1.00
2	cmHg	×0.75	–75 ~ 75		
3	bar	×0.01	–1.00 ~ 1.00	×10	–1.0 ~ 10.0
4	psi	×0.145	–14.5 ~ 14.5	×145	–14 ~ 145

■ SWITCH OUTPUT MODE

Output		SW 1				SW 2			
Mode		Separate		Window comparator		Separate		Window comparator	
Operation		HI	LO	A	B	HI	LO	A	B
Selection number	0	○				○			
	1	○					○		
	2		○			○			
	3		○				○		
	4			○				○	
	5			○					○
	6				○			○	
	7				○				○
		Setting 1 Note 1		Lower limit : Setting 1 Upper limit : Setting 1 Note 2		Setting 1 Note 1		Lower limit : Setting 1 Upper limit : Setting 1 Note 2	

Separate mode	Window comparator mode
(HI operation)	(A operation)
(LO operation)	(B operation)
P1≦P2 or P1≧P2	P1≦P2+2H

P1 : Setting 1, P2 : Setting 2
H : Switch hysteresis

(Note 1) In the Separte Mode, setting 1 corresponds to SW1, and Setting 2 corresponds to SW2.
(Note 2) In the Window Comparator Mode, the minimum value for SW1 and SW2 corresponds to Setting 1 and the maximum value corresponds to Settng 2.

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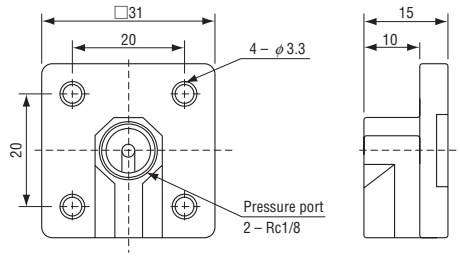
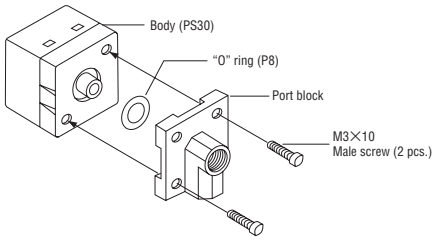
■ HOW TO MOUNT OPTIONAL ACCESSORIES (Sold separately)

● Port block

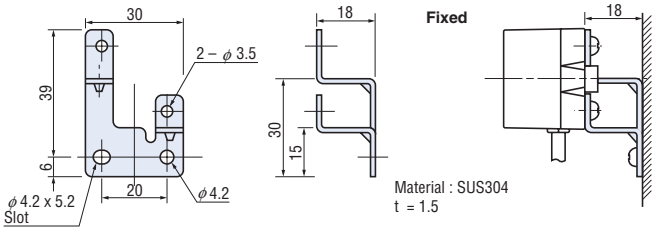


Material : Zink die-casting / nickel plate

● How to mount port block

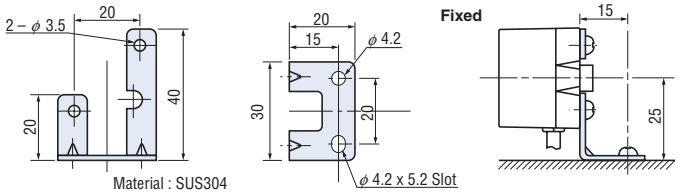


● Rear panel mounting bracket



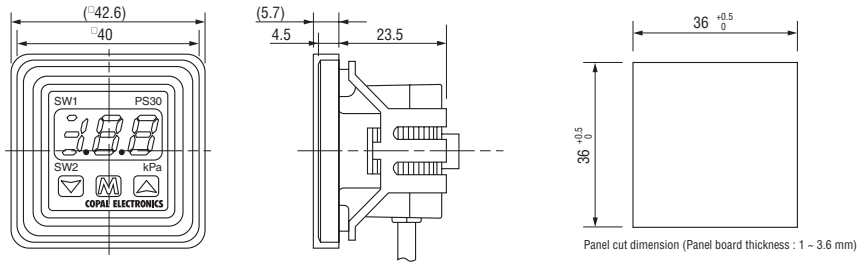
Material : SUS304
t = 1.5

● Panel mounting bracket



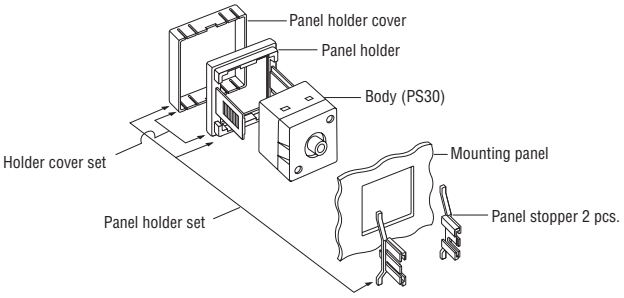
Material : SUS304
t = 1.5

● Panel mounting bracket (Option)



Panel cut dimension (Panel board thickness : 1 ~ 3.6 mm)

● How to mount panel holder cover set



Name	Description	Contents
ACPG-001	**Rear panel bracket set**	Rear panel bracket and M3 x 4 male screw (2 pcs.)
ACPG-002	**Panel bracket set**	Panel bracket and M3 x 4 male screw (2 pcs.)
ACPG-003	**Panel holder set**	Panel holder cover Panel holder Panel stopper (2 pcs.)
ACPG-004	**Holder cover set** **(For protecting operating panel)**	Panel holder cover Panel holder
ACPG-005	**Port block**	Port block "O" ring (P8) M3 x 10 Male screw 2 pcs. Seal screw 1 pc.

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